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ABSTRACT

The Academic Environment Inventory (AEI), developed to measure students' experience of stressor events and support events in middle or junior high school, was used to study 107 students in a mostly black, low-income urban public school and a comparison group of 49 students in a mostly white, high-income private school. Project students and comparison students reacted similarly to stressor events. However, project students reported a significantly higher frequency of stressor events and a somewhat lower frequency of support events. The private school students reacted much more positively to support events. When mid-year grade point average was considered for a subsample of 80 project students (39 boys and 41 girls), the AEI was found to account for as much variance as the California Achievement Test of Reading. Different patterns were found for boys and girls. Stressor reaction appears to be connected to the decision to deal with potentially stressful events and support reaction with the decision to respond positively to support opportunities. Variance in students' reactions to stress seems to relate to existing social and academic agendas for boys and girls. (CG)

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Students' Stress, Social Support, and Achievement in an Urban Middle School

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Paper presented at the Annual Meeting of
the American Educational Research Association
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Abstract

A new instrument, the Academic Environment Inventory [AEI], was developed to measure students' experience of stressor events and support events in the middle or junior high school classroom and school environment. A comparison of the subscale scores of students in two schools, a public school with a mostly black, low-income student population [n = 107] and a private school with a mostly white, high-income population [n = 49], found that the two groups of students reacted similarly to stressor events, that the public school students perceived the stressor events to be happening more frequently, that the private school students reacted more positively to the support events, and that the private school students perceived the support events to be happening more frequently. For a subsample of 80 students in the public school, 39 boys and 41 girls, the AEI accounted for as much variance of Mid-year Grade Point Average as the California Achievement Test of Reading administered the previous spring. Different patterns were found for boys and girls. The discussion focuses on how the boys' and girls' experience of stressor events in the school relates to different expectations for boys and girls and the different ways they are at risk. The subscores "Stressor Reaction" and "Support Reaction" appear to represent the appraisal of stressor events and support events.

A large and geometrically increasing body of research is relating the experience of stress to physical health, mental health, and task performance or behavior. In recent years, this research has included a number of studies of teachers' stress (Farber, 1983). However, relatively few studies of students' stress in school have been reported.

A variety of studies have found that social support moderates the effects of stress on health (Haggerty, 1980; Boyce, 1981). However, none of the stress studies seems to have examined whether social support moderates the impact of stress on task performance. In a review that found inconsistencies in the social support results, Mitchell (1984) concluded that it is crucial to pay attention to the context of social support and its bearing on stress. The research to be reported today is concerned with the effects of the stress and support experienced by students in an urban middle school on their academic performance.

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Stress can be defined as a reaction to an experience or feeling of an imbalance between environmental demands and an individual's capabilities and resources or supports for dealing with the demands (Lazarus & Launier, 1978; Veno & Davidson, 1978). Social support can be defined as emotional support, cognitive or goal-directed support, and tangible support provided to an individual by significant others (Caplan, 1974; Kaplan, Cassel & Gore, 1977).

One of the major approaches to studying the influence of stress on health and behavior is the life changes or recent life events approach (Holmes & Rahe, 1967; Dohrenwend & Dorenwend, 1974). The obtained correlations between life event measures and level of physical and/or psychological distress have consistently been significant, though accounting for a small portion of the variance--in the .20 to .35 range of correlations (Wilcox, 1981). The most widely used list of events for measuring adolescents' recent life changes is Coddington's (1972) Junior (or Senior) High School Age Group Life Change Unit Scale. Studies have provided empirical verification of a correlation between undesirable life events and various outcome variables for adolescents, including conflict with parents, delinquency, fighting and self-destructive tendencies (Gersten, Langner, Eisenberg and Orzek, 1974); increased used of health care facilities, physical symptoms and personal problems (Gad and Johnson, 1980); depression, insomnia, injury hysteria, etc. (Newcomb, Huba, and Bentler, 1981); and school absence and substance abuse (Vaux, 1981). The Coddington instrument has not been related to academic performance in school. Furthermore, only a few of the items on the Coddington instrument refer to educational events. Finally, researchers have recently been pointing out that stress includes chronic, daily hassles and disappointments as well as catastrophic life events (Lazarus & DeLongis, 1983; Thoresen & Eagleston, 1983), and finding that both categories of stressors impact negatively on individuals' health (Gortmaker & Eckenrode, 1982).

A number of clinical investigators have observed the potential for, especially, the young adolescent's experiencing stress in school. Hamburg (1974) pointed to the difficulty of children's having to negotiate the changed structure of school at this age simultaneously with psycho-biological changes. Rutter and Quinton (1977) have found that stress factors potentiate each other, including both home and school factors. Johns and Johns (1983) describe various ways in which behaviors that are

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interpreted simply as disciplinary infractions, rebellion, or acting out in the school can stem from stress the student is experiencing. Dropout studies (e. g., New York City Board of Education, 1979) have reported many findings that might now be reinterpreted in a stress frame of reference. Hamburg cited studies by Armstrong (1964) and Finger and Silverman (1966), that found a large percentage of students with good elementary school records had only fair or poor success in junior high school.

Wiekhorst (1973) created an instrument to study home, school, and peer sources of pressure on adolescents' academic achievement, but the items have very questionable validity. Phillips (1978) created a Classroom Stress Questionnaire, but most of the items on the instrument were variations on the academic performance anxiety items that make up a measure of test anxiety. Of course, the research on test anxiety itself is voluminous. Test anxiety has been found repeatedly to correlate negatively with school achievement (Sarason, 1980). One indicator of the recent link-up that is taking place between the concepts of stress and of test anxiety, which can be regarded as a subpart of school stress, is I. Sarason's (1981) finding that the effect of test anxiety on test performance can be reduced experimentally by social support. School stress, however, encompasses not only performance anxiety in school, but students' reactions to a whole range of potentially upsetting cognitive, social, and physical conditions and events in the classroom and school environment.

Population and context

The school in which this study was located was an inner-city middle school with a population in 1983-84 of 535 students in the sixth, seventh, and eighth grades and special education classes. About one third of the students in the regular, graded classrooms had been kept back at least one year in their school career. About 75% of the students were eligible for the school free-lunch program. The great majority of the students were American-born blacks, while the rest were from the West Indies or Hispanic. About 60% of the teachers and administrators were black, and 40% were white or Asian.

A subsample of the student population for whom specific measures were available is described below

Development of the Academic Environment Inventory

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When the investigator first set out to study the impact of stress and social support on young adolescents' academic achievment, it was his intention to include studies of home, school, and peer sources of stress and social support simultaneously. However, after only a few months in the school which had been selected as the site for the research, he concluded that an approach to the students' homes for information on major life events and daily hassles could not be justified until the school had made some progress with reducing school stress. He then turned to creating an instrument that would measure the recurrent stressors and supports experienced by the students in the life of the classrooms and the school itself. The project aimed to feed back findings from the instrument to the school in such a way as to contribute to the reduction of students' stress in the school.

Extensive observations and interviews of students and teachers in the Spring, 1983 semester resulted in an inventory of positive and negative events like the following:

- Some students hit me when I didn't hit them.
- Other students act friendly toward me.
- Most of my teachers are too busy with other things to help me with my homework.
- Most of my teachers explain something a step at a time so I will be sure to know how to do it.

When a preliminary instrument made up of items like these was administered to a sample of the students, the results suggested that, of the negative events, only those attributed to peers, not adults, were happening with any substantial frequency. It was evident that social desirability was influencing these findings, and so the items were reworded to exclude any specification of the persons to whom the events might be attributed. A 50 item instrument was tried out on a sample of students, and on the basis of the results 34 items were selected for the instrument used in the research this paper reports. The Academic Environment Inventory (AEI) contains 18 items referring to stressor events and 16 items referring to support events in the classroom and school environment. (Although a further revision of the instrument is in progress, this will not be discussed until the conclusion.) A few of the items are the following:

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Stressor events:

- People in the classroom wouldn't get quiet.
- Someone tried to copy my work when I didn't want them to.
- Someone hit or kicked or pushed me.
- I couldn't get an answer to a question I asked.

Support events:

- Somebody helped me think about a personal problem.
- People in the classroom spoke respectfully to each other.
- Someone helped me do something I needed to do.
- I got to be in a class or group with other students I like.

The AEI requires that each event be responded to on two scales:

IF THIS HAPPENS TO YOU IN SCHOOL, HOW DO [OR WOULD] YOU FEEL ABOUT IT?
A. __very good __good __made no difference __upset __very upset

DID THIS HAPPEN DURING THE PAST WEEK [OR SINCE THE BEGINNING OF LAST WEEK]?
B. __hardly ever __sometimes __often

The AEI yields four main subscales, Stressor Reaction, Stressor Frequency, Support Reaction, and Support Frequency. The subscale scores are the sums of the responses to the feeling questions and the frequency questions for the stressor events, and again for the support events.

The AEI was completed in December, 1983 by 107 students from the sixth and seventh grade regular classrooms in the project school. To examine its reliability and validity for a more diverse population, the AEI was also administered to 49 sixth and seventh grade students in a private school where most of the students were white and affluent. When the data from the two schools were pooled, the Cronbach alphas (Cronbach, 1970) were .85 for Stressor Reaction, .85

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for Stressor Frequency, .83 for Support Reaction, and .74 for Support Frequency. These alphas are similar to those that were obtained for the two schools separately. The first three alphas are quite acceptable for a personality or perceptual measure, while the last is marginally acceptable.

The AEI data from the two schools were also subjected to a factor analysis, which, though the total number of subjects was much less than desirable for this, yielded very meaningful results. The first four factors produced by a varimax solution clearly represented the four subscales of the AEI. When the number of factors was subsequently set at four for principal factoring with iterations, these factors and the proportion of variance accounted for by each were, in order, Support Reaction (41.3%), Stressor Frequency (28.4%), Stressor Reaction (17.8%), and Support Frequency (12.4%). All but 4 of the 68 items loaded first on the factor with which they were intended to be associated.

A comparison of the means on the AEI subscales for the samples from the two schools is very provocative. Table 1 reports the results of t-tests between these means. The strongest expectation was that the frequency of stressor events would be greater in the project school than in the comparison school. This hypothesis was clearly confirmed, with the project students scoring 31.9 to the comparison students' 25.4 (on a scale of 0 to 54) in their ratings of Stressor Frequency, a highly significant difference ($p < .001$). The project students rated the frequency of support events somewhat lower, 33.8, than the comparison students, 36.2 (on a scale of 0 to 48), a lesser but still significant difference ($p < .01$).

That the project students and comparison students' reactions to stressor events were very similar, 69.2 and 71.0 respectively, is striking. (Per item, these means would be 3.8 vs 3.9, on a scale of 1 to 5 from feel very good to very upset). It appears that the two groups of students are more alike than might have been anticipated when they are confronted with potentially stressful events. However, the sharp difference ($p < .001$) between the two groups in how they responded to support events, 66.5 for the project students and 72.0 for the comparison students (per item this would be 4.2 vs. 4.5 on a scale of 1 to 5 for, now, very upset to very good), qualifies this interpretation. The finding underscores the importance of the question that is pursued in the analysis of the project school data, namely, how reactions to stressor events and

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support events function to moderate the impact of stressors on the students' achievement.

Two of the stressor events and one of the support events contained in the AEI refer directly to academic success or failure, for example, "I was warned that I might not pass a subject or pass to the next grade." All of the findings to be reported below are actually stronger with the inclusion of these three items, but they have been eliminated from the analyses in order not to contaminate the examination of the relationship between the stressor events and support events, on the one hand, and academic achievement, on the other.

Reading Test score, the Academic Environment Inventory, and Mid-year Grade Point Average in the Project School

Measures

The Academic Environment Inventory has already been described above. Scores from the 1983 California Achievement Test of Reading, administered throughout the city's schools in Spring, 1983 were available in most of the students' records. The reading test scores have been adjusted to remove differences due to the students' being in different grades; the resulting scores are all relative to the norm for grade 6 (6.7). A Mid-year Grade Point Average has been calculated by averaging the three grades that were potentially available for all subjects, Language Arts, Mathematics, and Science. (Social Studies grades had not been recorded for many students.)

Sample

Of the 107 students in the project school for whom complete AEI scores were obtained in December, 1983, there were 80 who had parental permission for the project's access to their records and for whom 1983 Reading Test scores and 1983-84 mid-year grades were available. Of these 80 students, 50 were in the sixth grade and 30 were in the seventh grade. Thirty nine (39) of the cases were boys and 41 were girls. Table 2 displays the means and standard deviations on the several measures for the total subsample and for the boys and the girls separately.

There was a very significant difference ($p < .001$) between the Mid-year Grade Point Average of the boys, 71.7, and the

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girls' Mid-year Grade Point Average, 79.9. At the same time, there was not a significant difference between the boys' and the girls' adjusted 1983 Reading Test scores, 5.9 and 5.7 respectively. Something other than reading ability must therefore have been influencing the differential achievement of the boys and the girls. There were also, however, no significant differences between any of the boys' and the girls' AEI subscale scores in this subsample.

Results

Two interaction terms involving AEI subscores have accounted for significant proportions of variance in preliminary analyses and are included in the regression analysis to be reported here. One is the interaction between Support Reaction and Reading Test score ("Support Reading") and the other is the interaction of Stressor Reaction with Stressor Frequency ("Stressor Experience").

Table 3 displays the zero order correlations of the main variables for the total subsample of 80 students and for the 39 boys and the 41 girls separately. Tables 4, 5, and 6 show the multiple correlations and regressions of Mid-year Grade Point Average on Reading Test score and the AEI subscale scores and interaction terms for the whole subsample and for the boys and the girls separately. The independent variables have been entered in a hierarchical order that assumes that the prior year's reading test score has some effect on the levels of both social support and stress. However, it could well be that prior social support and stress have influenced reading test scores; the order of entry here is a conservative one for the purpose of controlling for reading to examine the contributions of the AEI variables. The order also insures that the main effects of the AEI subscores are tested before considering the two interaction terms.

The contribution of each independent variable is now examined separately. In the analysis for the whole subsample, four of the seven independent variables account for significant proportions of variance. 1983 Reading Test, the first variable entered, accounts for 17.7% of the variance ($p < .001$); Stressor Reaction, though it was not added until the fifth step, accounts for 15.1% ($p < .001$); the interaction term Support Reading accounts for 6.0% ($p < .01$); and the interaction term Stressor Experience accounts for 3.8% ($p < .05$).

For the boys alone, the Reading Test accounts for 27.7% of

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the variance ($p < .01$), Support Frequency accounts for 5.3% ($p < .10$), Support Reaction accounts for 8.4% ($p < .05$), Stressor Reaction accounts for 11.3% ($p < .01$), Support Reading accounts for 4.1% ($p < .10$), and Stressor Experience accounts for 5.3% ($p < .05$). Boys tended to have a higher mid-year grade point average if they were better readers, experienced more support events, reacted positively to support events, and reacted negatively to stressor events. There was a somewhat stronger correlation between reading test score and grade point average for boys with strong Support Reaction than for boys with weaker Support Reaction. Finally, for boys with more negative reactions to stressor events, there was no relationship between the frequency of stressor events they experienced and their grade point average, while for boys with more neutral or indifferent reactions to stressor events, grade point average tended to decline as the frequency of stressor events increased.

For the girls, Reading test explained 25.0% of the variance ($p < .01$) of Mid-year Grade Point Average. The main effects of Support Reaction and Stressor Reaction, however, explained only 4.4% ($p < .10$) and 3.0% respectively, and Support Reading explained only 2.2%. Stressor Experience--the interaction of Stressor Reaction and Stressor Frequency--explained 15.9% ($p < .01$) of the variance of Mid-year Grade Point Average for the girls, even though it was added only at the seventh and last step. Girls, like the boys, tended to have a higher mid-year grade point average if they were better readers and if they had a stronger positive reaction to support events. The effect of Stressor Reaction, however, was manifested almost entirely in its moderating the impact of Stressor Frequency on grades; for the girls who reacted strongly to stressor events, there was not a relationship between the frequency of stressor events and mid-year grade point average, whereas for the girls whose reaction was weak or indifferent, grade point average went down as the frequency of stressor events went up. While similar to the finding for boys, the interaction was much stronger for the girls than for the boys, i. e., the girls with the more indifferent stressor reaction were more vulnerable to the debilitating impact of the stressor events.

Discussion

The Academic Environment Inventory is accounting for as much variance in the project students' Mid-year Grade Point Average as the Reading Test given the previous Spring. Perhaps this helps explain why academic success in the

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low income
junior high school for many students, especially for black males, becomes a matter of survival in the school. The nature of the processes involved, however, whether they are psychological or sociological or both, needs to be examined further. Extensive ethnographic and clinical observations have been conducted in the project, and these help to inform a discussion of the statistical findings.

No main effect has been found for frequency of stressor events. This is hard to believe, as one has observed the assault of stressors on students and teachers alike and the amount of instructional time and emotional energy that is consumed in dealing with stressor events. In fact, within a given classroom or the school as a whole, teacher absences, noise in the hall, and cursing or shouting in class are events that occur for all of the students. The finding that they do not make a difference is partly an artifact of the regression analysis having been performed with individuals as the unit of analysis. If the analysis were conducted with schools, or even classrooms (especially differently tracked classrooms) as the unit of analysis, one predicts that a negative correlation between the frequencies of stressor events and the students' grades associated with these units would be highly significant. A positive correlation with a measure of general distress would also be expected. These are two implications of the difference in frequency of stressor events perceived by the students in the project school and the comparison school, even though the students were similar in their perception of how upsetting these events would be.

That the frequency of stressor events did impact negatively on grade point average for those students, especially girls, whose Stressor Reaction was more indifferent, points to the greater vulnerability of some students than others, and a moderating effect of Stressor Reaction that might be very important for counseling. Stressor Reaction also showed up as a significant main effect for the boys. It is crucial to notice, however, that it is the more strongly negative reaction to stressor events, rather than the "laid back" reaction, that is protective for both the boys and the girls. As Johns and Johns (1983) point out, a more indifferent reaction may even be masking distress. The present finding suggests that strong stressor reaction is not as much a direct indicator of psychological distress as it is of a more evaluative orientation that combines both values and ego strength. True, the respondents are indicating that they do or would get upset when the stipulated stressor events happen. The

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variable may well be related to appraisal of a potentially stressful event (Lazarus & Launier, 1978; Baum, Singer, & Baum, 1981). Support Reaction, which has a significant correlation with Stressor Reaction (students who reacted positively to support events tended to react negatively to stressor events), may also tap an aspect of appraisal.

In an analysis, not reported here, for a different, overlapping subsample of the project students for whom the relevant data were available, Stressor Frequency was found to have a significant correlation with a measure of test anxiety. In the same analysis, Stressor Reaction did not correlate with test anxiety. This is further evidence that Stressor Reaction does not directly measure a state of stress or disposition toward stress. Perhaps Stressor Reaction and Support Reaction should be renamed Stressor Appraisal and Support Appraisal.

Neither Support Reaction nor Support Frequency is functioning as a moderator of stress in the way that the investigator envisioned. Perhaps, as Mitchell (1984) concluded about social support in other studies, this is related to the context. The comparison of the AEI scores between two schools invites further study of this. In addition, the subscales might be greatly strengthened by adding to the instrument several items that would be more like the social support items that previous research has found moderate stress experience. The following items would be among these, each to be responded to in terms of both the reaction question and the frequency question:

- There was an adult at school who I can talk to about almost anything that is bothering me in school.

- There was a student at school who I can really count on for help when I need it.

The issue of sociological vs. psychological processes has to do with the fact that the students' reactions to stressor events do not occur in a social vacuum, but seem to interact with the roles available for boys and for girls in school--in school generally for boys and girls, in this school, for black boys and girls from lower-income families, etc. Both the boys and the girls have to meet both social and academic agendas in school. The higher grades received by the girls in this sample than by the boys suggests that this is easier to accomplish for the girls than for the boys, at least to the satisfaction of the teachers. Observations bear this out. The boys expect a higher, more

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demonstrative level of activity from one another than the girls do, among themselves and in interaction with the girls. For example, almost every single instance of a disruptive outburst between identifiable individuals in class recorded in the investigator's journals for 1983-84 involved a boy, in interaction with other boys alone, with girls, or with boys and girls. (This statement is not meant to include a class's being generally noisy or out of order, which was frequently observed and involved both girls and boys.) Girls' task interruptions tended to be quieter and more surreptitious (cf. Metz, 1978, on the different styles of resistance of upper and lower track students). On the other hand, the greater academic vulnerability of the girls with weaker Stressor Reaction scores might be connected to larger issues of sensitivity and passivity that affect the girls. These findings must not simply be fitted to stereotypes. It may be that certain configurations of the variables of the AEI would help describe the more androgynous roles that Werner and Smith (1982) found characterized more resilient children and youth. Stressor Reaction appears to be connected with boys' and girls' acting decisively to deal with potentially stressful events, and Support Reaction with their responding positively to support opportunities.

The data of this report have been collected in the first year of a three year, longitudinal study. Data is currently being collected in the school from a larger sample of students and with instruments to measure self esteem, locus of control, and coping styles in addition to the stress and support variables of the Academic Environment Inventory. Class level data on the students' perceptions of the frequency and importance of the stressor events and the support events have been fed back to them in group guidance sessions, and follow-up sessions are being conducted to facilitate students' processing ongoing events. At the same time, the system in which all this is embedded is constantly generating new stress. Whether or not the intervention makes a difference, and how different patterns of stressor and support experience influence the students' careers in the school, will be the subject of subsequent reports.

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Table 1
Academic Environment Inventory Subscale Means for Project School and Comparison School

Variable	Project School n = 107 Mean	S. D.	Comparison School n = 49 Mean	S. D.	Comparison by school t
Support Reaction	66.5	7.82	72.0	5.93	-4.87**
Support Frequency	33.8	4.79	36.2	4.38	-3.69*
Stressor Reaction	69.2	9.39	71.0	5.67	-1.47
Stressor Frequency	31.9	6.12	25.4	3.54	8.28**

* $p < .01$, two tailed test. ** $p < .001$.

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Table 2
Means, Standard Deviations, and t Values for the Comparison of Boys and Girls in Subsample

Variable	Total n = 80 Mean	S. D.	Boys n = 39 Mean	S. D.	Girls n = 41 Mean	S. D.	Comparison by sex t
Mid-year G. P. A.	75.9	9.27	71.7	9.83	79.9	6.67	-4.37*
C. A. T. Reading	5.8	1.51	5.9	1.46	5.7	1.57	0.43
Support Reaction	62.0	7.48	62.8	7.03	61.2	7.89	0.97
Support Frequency	29.7	4.75	29.4	4.94	30.0	4.60	-0.60
Stressor Reaction	60.4	7.49	59.2	8.12	61.4	6.77	-1.31
Stressor Frequency	28.6	5.47	29.0	5.36	28.2	5.61	0.65

* $p < .001$, two tailed test.

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Table 3
Zero-Order Correlations for the Total Subsample and for Boys and Girls

	MGPA	CATR	SUPR	SUPF	STRR	STRF	
CATR	.42****						
SUPR	.23**	.12					
SUPF	.02	-.17*	.09				
STRR	.43****	.05	.26**	.07			
STRF	-.14	-.17*	-.06	.29***	.10		Total n = 80
CATR	.53****						
SUPR	.32**	-.02					
SUPF	.11	-.22*	.25*				
STRR	.57****	.33**	.15	.26*			
STRF	-.06	-.20	-.16	.30**	.27**		Boys n = 39
CATR	.50****						
SUPR	.31**	.22*					
SUPF	-.19	-.12	-.03				
STRR	.16	-.22*	.41***	-.20			
STRF	-.20	-.16	.01	.29**	-.06		Girls n = 41

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

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Table 4
Multiple Correlation and Regression Coefficents of Mid-year Grade Point Average on Reading Test and the Support and Stress Variables and their Interaction Terms, for Total Subsample (n = 80)

Independent Variable	Overall R	R^2	dR^2	Beta
CATR	.42****	.18	.177****	.42
SUTF	.43****	.19	.009	.10
STRF	.44****	.20	.009	-.10
SUTR	.47****	.22	.025	.16
STRR	.61****	.37	.151****	.41
SUTR x CATR (SUPRD)	.66****	.43	.060***	2.61
STRR x STRF (STREX)	.69****	.47	.038**	2.08

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

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Table 5
Multiple Correlation and Regression Coefficients of Mid-year Grade Point Average on Reading Test and the Support and Stress Variables and their Interaction Terms, for Boys (n = 39)

Independent Variable	Overall R	h^2	dh^2	Beta
CATR	.53***	.28	.277***	.53
SUFF	.57***	.33	.053*	.24
STRF	.58***	.33	.000	-.02
SUFR	.64****	.41	.084**	.31
STRR	.73****	.53	.113***	.41
SUFR x CATR (SUPRD)	.75****	.57	.041*	2.13
STRR x STRF (STREX)	.79****	.62	.053**	2.64

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

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Table 6
Multiple Correlation and Regression Coefficients of Mid-year Grade Point Average on Reading Test and the Support and Stress Variables and their Interaction Terms, for Girls (n = 41)

Independent Variable	Overall R	R^2	dR^2	Beta
CATR	.50***	.25	.250***	.50
SUPF	.52***	.27	.017	-.13
STRF	.52***	.28	.009	-.10
SUPR	.56***	.32	.044*	.22
STRR	.59***	.35	.030	.21
SUPR x CATR (SUPRD)	.61***	.37	.022	1.79
STRR x STRF (STREX)	.73****	.53	.159***	4.86

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

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